

under your cooler, and adioyning to them all severall cleane tubs to receive your worts and liquors: then in your Bake-house you shall have a faire bolting house with large pipes to boulte meale in, faire troughes to lay leaven in, and sweet safes to receive your bran: you shall have boulders, searfes, raunges and meale sives of all sorts, both fine and course; you shall have faire tables to mould on, large ones to brake in the soales thereof, rather of one or two intire stones than of many bricke, and the mouth made narrow, square, and easie to bee close covered: as for your peeles, cole-rakes, maukins, and such like, though they be necessary, yet they are of such generall use, they neede no further relation. And thus much for a full satisfaction to all the *Husbands* and *Houewives* of this Kingdome touching Brewing, Baking, and whatsoever else appertaineth to either of their offices.

The end of the English House-wife.

FINIS.

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The end of the English House-wife.

FINIS.

THE INRICHMENT of the **W**eald of Kent:

OR,

*A Direction to the Husband-man, for
the true ordering, manuring, and enriching
of all the Grounds within the Wealds of
Kent and Sussex, and may generally
serue for all the Grounds in England,
of that nature: As,*

1. *Skewing the nature of all Wealdish grounds, comparing it with
the soile of the Shires at large.*
2. *Declaring what the Marle is, and the severall sorts thereof,
and where it is vsually found.*
3. *The profitable use of Marle, and other rich manurings, as well
in each sort of arable land, as also for the increase of Corne and
Pasture through the Kingdome.*

Painfully gathered for the good of this Iland, by a man of
great eminence and worth, but revised, enlarged, and
corrected with the consent, and by conference with
the first Author. By *Gervase Markham.*



LONDON,

Printed by *Anne Griffin* for *JOHN HARRISON*, at the
golden Unicorne in Pater-noster row. 1636.

DECLARATION

of the

OR

Question to the Hind and man, for

the new ordering, manner, and manner

of all the Grounds within the Kingdom

East and South, and may generally

be used for all the Grounds in England

of this nature: As

1. Shewing the nature of all the Grounds, comparing it with

the state of the State at large.

2. Declaring what the State is, and the several parts thereof

and where it is to be found.

3. The grounds of the State, and other things necessary, as well

in each part of each land, as also for the benefit of the State

to be through the Kingdom.

4. Finally, directed for the good of the Land, by a man of

great eminence and worth, but revised, enlarged, and

corrected with the consent, and by conference with

the first Author. By George Jones, Esq.



Printed by Adam Carter for John Wilson, at the
Royal Library in London. 1686.



TO
THE HONOURABLE

Knight, Sir GEORGE RIVERS of
CHAFFORD, in the County of
K E N T.

S I R:



Hence Ad I no scale (more than this bare
and plaine moulded Epistle (by
which to come to your worthy
eares, yet in respect of the honest
Liverie which it carries (being
necessary and husbandly collecti-
ons, especially gathered for the Countrey and Soile
wherein you live) I know it cannot chuse but finde
both favour and mercy in your acceptation; but when
I call up into my consideration, the great worthinesse
of your experience in this and all other the like af-
fares, which tend to the generall benefit of the Com-
mon-wealth, and weigh the excellencie of your wise-
dome, judgement, bounty, and affection unto hospita-
lity (which give both strength and advancement to
projects

The Epistle Dedicatory.

projects of this nature) I could not but take unto my selfe a double encouragement, and boldly say unto this worke which I offer to your goodnesse, Goe and approach with all thy sweetnesse before him, bee that so perfectly knowes all which thou canst or wouldst discover; he that is able both to correct and amend any thing that is imperfect in thee, bee, for vertues sake, will never forsake thee. Beleeve mee (worthy Sir) should this subject wish it self a Patron, I do not think it could wish beyond you; for you are a volume full of all that of which it intreateth: witnesse your yeares, your place, your supportation of the poore, and your continuall employments; with any of which there is not (of your ranke) a second living in your Countrey, to walk hand in hand with you: Being then (deare Sir) the oldest and best friend to your countrey, forsake neither her, nor this which comes to serve it; and though in this Glasse some lineaments may appeare imperfect, yet by the helpe of your favour (though little bee exact or most excellent) nothing shall be grosse or unworthie the sur vay of your worthier patience, And so I rest,

Yours to be commanded,

Gervase Markham.



A discourse of the Weald of Kent; and a comparison of the arable Lands therein, with the other parts of the Shires. Together with some necessary counsels for the ordering and enriching of the marleable Lands in the Weald, or generally in any part of this Kingdome.

THe Weald of Kent is the lower part of that Shire, lying on the South side thereof, and wards adjoyneth to the Weald of *Sussex*, to the West. Further additions.

This Weald both in *Kent* and *Sussex*, was sometimes all (or the most part) woody, wilde, and (in the first times) uninhabited; and from thence tooke the name of Weald from the *Saxon* word, *Weale*, or *Teale*, or *Weald*, which signifieth a woody countrey, or Forrest-like ground. The *Brittans* called it *Andred*, which signifieth Greatnesse or Wonderfull, and in Latine it was called *Salus Andred*, (that is to say) the Chase or Forrest of *Andred*, by reason of the great circuit, or large bounds thereof.

Touching the true boundary or limits of this Weald, there have bin divers opinions, and most of them various, and much differing both in place and quantity; but that which is the neereft and best allied unto truth, both according to the opinions of *Affertus Menevensis*, *Henry of Huntingdon*, & others of most credible report, is; that it extendeth from the city of *Winchelsey* in *Sussex*, an hundred

dred and twentie miles in length towards the west, and 30 miles in breadth towards the north. Now, although this report bee most agreeing unto veritie, yet who knows not that curiosity may raise up many objections to withstand it; & therefore M. Lambert in his Perambulation of Kent, hath prescribed the best & most infallible way to find out the true & certain bounds of this weald, to be onely by Iewrie, or the verdict of 12 men impanelled for that purpose; either in case of controversie, or other particular search; and this hath bin in these latter times brought forth most plentifully, for it hath beene found by divers late verdicts, upon special and most necessarie occasions, that the Weald of Kent is truly M. Lambert's second step in his Perambulation of Kent, reaching from *Winchelsey* in *Sussex*, and that hill there, unto the top of *Rivers* hill in Kent; and neither farther towards *London*, nor shorter towards *Tunbridge*; which agreeth so perfectly with the former limitations, that both may be received as most true and sufficient.

This Weald was for many yeares held to be a wilde Desert, or most unfruitfull Wildernesse (as write the authors before mentioned) & indeed such is the nature and disposition of the soile thereof to this very day: for it will grow to frith or wood, if it be not continually manured and laboured with the plough, and kept under by tillage, so as it may truly be said of it, *Incolta paratur vomere Sylva*. It is throughout (except in very few places adjoining to brooks or rivers) of a very barren nature, & unapt either for pasturage or tillage, untill that it be holpen by some maner of comfort, as dung, marle, fresh earth, fodder, ashes, or such other refreshings; and that seemeth to have beene the cause for which in old time it was used as a Wildernesse, and kept for the most part

part with herds of Deere, and droves of Hogs, as is specified in divers historicall relations.

And as there be yet remaining in *Sussex* divers great forrests, and sundry commons or wastes, having five or six miles in length, which for the most part are not fit to be manured for corne, and yeeld but little profit in pasture; so have there been also in *Kent* (within our memory) a great number of woody and over-grown grounds, converted of late to pasture & tillage, even after such a manner as in the said Perambulation is testified, where it is said, that although the weald of *Kent* belonged to sundry known owners long since, yet was it not then allotted into particular Tenancies, as the other parts of the shire were, but it was, in proceffe of time, by little and little gained, as men were contented to inhabit there, & to rid it of the wood; And hereof it is also, that besides sundry whole parishes which be named dens or low places, as *Tenderden*, *Marden*, *Beneden*, and sundry others, there be moreover many smaller portions, almost in every part of the weald of *Kent*; which he likewise called dens; as the den of *Cranebrooke* in *Cranebrooke*; the den of *Hawkehurst* in *Hawkehurst*, and such others; the which (as it seemeth) were at the first undertaken to be manured by sundry particular persons, whose names were then taken for those very dennes, and continued many yeares together, as by ancient evidences it doth yet appeare, howsoever the age of long time hath now almost worn & consumed them all out of knowledge. Neither doth the weald of *Kent* containe so many great manors or courts (for the proportion of the largenesse) as the rest of the shire doth, but was appertaining, for a great part thereof, to sundry of those mannors which do lye at large disperled thorow the shire, whereof each one

had a great portion in the Weald, which both in the booke of Doomf-day, and in sundry the court rolls, and rentals, passeth by the name of Weald, and *Silva Porcorum*, or swine gats, which were granted to divers of the farmers & owners of sundry tenancies, which did belong unto those dennes, and other lands within the Weald.

And albeit these dens be for the most part good large portions of lands, that be now broken into many several possessions, so as the same one Den sufficeth 20. householders at this day, yet is it very likely that each man at the first had his several den wholly & unbroken, whereof he & his posterity beareth name, untill that the same was by the custome of *Gavilkind*, by sale or by exchange divided & distributed amongst others into parts, as we doe now see them. But howsoever this Weald be of it selfe unfruitfull (as I said) & of a barren nature, yet so it hath pleased the providence of the Almighty to temper the same, that by the benefit of Margle or Marle (as it is commonly called) it may be made not onely equall in fertilitie with the other grounds of the shire, as well for corne as grasse, but also superior to the more and greater part of the same. The which manner of bettering the ground is not now newly discovered, but was the ancient practice of our fore-fathers many yeares agoe, as by the innumerable Marle-pits digged & spent so many years past, that trees of 200 or 300 yeares old, doe now grow upon them, it may most evidently appeare, besides the which we have mention of Marle in books of gainage or husbandry, that were written in the daies of K. Edward the 2. or before, howbeit the same manner of tillage, by meanes of the civill warres, maintained many yeares as well in the time of the Barons warres, as of the wars betwene the house of *Torke*, and the family of *Lancaster*, was

The use of
marle is an-
cient.

Marling was
discontinued,
and is now re-
vived.

was so given over, and gone out of use, untill these 30. or 40. yeares, that it may be said to have been then newly borne and revived, rather then restored, because the very true art of enriching the ground by *Marle*, seemeth to lie hidden in part, as yet not to be discovered to the full: for in this short time we have seen many arable grounds which for sundry yeeres after the marling of them, have plentifully borne Wheat and other Graine, to be now become unfruitfull, & so will they continue, albeit they should bee now marled againe. And this commeth to passe by the ignorance of the right manner of ordering the *Marle*, which is as strong & chearefull as ever it was before, howsoever it worketh not his naturall effect, through the unskilfulnes of the Husbandman, that both wasteth the *Marle*, and loseth withall his time, his labour, his cost, and the profit of his ground. I cannot deny but a man shall see some grounds, of nature fit to take *Marle*, and of situation so neere to *Marle*-pits long time opened, that they might be marled plentifully with little charge; and have been heretofore marled indeed, & yet the same to lie now unploughed, and not onely barren of themselves, but also unapt for *Marle*, and incapable of amendment by Tillage: but, I must say withall, that albeit the men in those former ages had the right ordering of *Marle*, yet were not they all good Husbands alike, neither doth the Field joy alike under the Farmer, and under the very Owner of the same, the one seeking the very uttermost gaine that may be made during his short interest, & the other endeavouring to perpetuate his commodity, even to the end of his estate, which hath no end at all, so that through unskilfulnes of the one, and greedines in others, the ground may sooner be cramed to death with *marle*, then it shall be made the better or

fatter by it. The reason whereof I will reserve, untill that I have cause to reach in particular, after what manner and measure the ground is to bee marled. In the meane-while, I will open the nature and conditions of this wealdish ground, comparing it with the Soyle of the shire at large, and afterward declare unto you what the *Marle* is, and what sorts thereof, there bee usually found in the Weald of *Kent*; and lastly enter into the true and profitable use tereof, as well in each sort of arable Land, as also for the increase of Corne and Pasture thorow the kingdome.

The arable ground of this Weald hath commonly a fleet and shallow mould to be turned up by the Plough, so as in many places the dead earth or mould is within three inches of the face of the ground, & in the best places, the good mould exceedeth not fixe inches in depth at the most, & therefore it wanteth convenient substance to nourish Corne any long time, but will faint and give over, after a Crop or two; for the which reason also, it cannot yield any sweet or deepe Grasse. Besides this, the Weald hath many copped or hillyish grounds, out of which there doe many Quits or Springs of water issue, that make it cold & barren; and from these Hillocks, the best part of the good mould is washed downe into the Water-courses and Dikes that bee made to divide and draine the Land. Furthermore, the Weald is divided into many small inclosures, the biggest sort (for the most part) of which are betweene sixteene Acres and twelve in quantity, and thereby hath it many hedges & trees, which in unseasonable weather doe keepe both the Sun and Wind from the Corne, so as for want of that succour and comfort, it groweth & many times rotteth in the Earth, so that it carneth not, nor eareth, nor prospereth

reth kindly many times. And these small Closes are caused by this, that men are not able to marle any great part or quantity of ground at once; and having marled a little, they are desirous to sow it with corne: for the preservation whereof, as also for draining it, they are enforced to make so many and small severalls: for all which reasons it is plaine, that there is little good arable Land there, and rarely any good pasture, those only places excepted, which are amended by irrigations of flouds, which there is called flowing and overflowing. Contrariwise, the arable land of the Shire at large, hath a deep and fat mould of good earth, that is able to beare five or fixe good Crops together without intermission; and after three or foure yeares rest, will doe the like againe, & may so interchangeably keepe that course for ever: yea there be many grounds that are sowed without ceasing, because the mould is so deep, that when the upper part thereof beginne to faint and bee weary, men can adde some strength of Cattell, and with the Plough goe deeper, and fetch up a fresh mould that will continue for a long season. Furthermore, this arable ground is a hollow dry ground, for the most part, on a deepe Clay, that by tillage and the weather, wil become dry and spungy, so as the raine there washeth in the fat of the earth, the rather, because it is not so hillish and sliding as the Weald, but more leuell, even and champion also, by which the Sunne and Wind doe dry the Corne, and doe make it both carne and eare well, and yeeld a purer flowre then that which is sobbed in wet, and hath long time lyen before it be dried againe. But forasmuch as the great odds between these two sorts of grounds, may be made even by the helpe of *Marle*, if it be rightly ordered, as I said I will now shew you what it is, and how many sorts

thereof be found in this VVeald of that countrey. *Marle* is indeed, as it is in name, the fat or (marrow) of the earth: for so did the *Germanes*, and so did our elders the *Saxons*, terme it, of the word *Marize*, which we found *marrow*, and thereof we call it *marling*, when we bestow that fat earth upon our leane ground. *Pliny* saith, That the *Britannes* (meaning us) did use to amend their Land with a certaine invention which they called *marga*, that is, the fat of the earth, and it is to be seene in *Conradus Heresbachius*, that the *Germanes* doe use it to the same end, and doe call it by the same name till this very day: it is therfore a fat, oily and unctionous ground, lying in the belly of the earth, which is of a warme & moist temperature, and so most fertile, seeing that heat & moisture be the father & mother of generation and growth, howbeit this is not a pure & simple marrow (as that is which lieth in our bones) but a juice or fat liquor mingled with the earth, as is the fat which lieth mixed, and dispersed in our flesh, so as the one may be drawne away, and the other remaine, as it shall anon appeare unto you.

Four sorts of
Marle.

1. 2.
3. 4.

Four sorts of *marle* be found in this VVeald, knowne afunder by the difference of colors, & thereby also differing in degrees of goodnesse one from the other: for there is a gray, a blew, a yellow, and red *marle*, all which be profitable, if they be earthy and fat, or slippery as soape: and most times little worth, if they be mixed with sand, gravell, or stone. So the blew is reputed the best, the yellow the next, the gray the next, and the red lesse durable then the other three; and yet it is thought the red to be the better, if it be found upon the blew or others. These *marles* doe lie in veines or floores, amongst those hillockes or copped grounds most commonly, whereof I have spoken, and do oftentimes shew themselves

selves at the foot of the hill, or about the mid way between the foot and the top thereof: some of them have over them a cover of ground, which we call Cope, not exceeding seven or eight foot in depth; some lie deeper, and other some doe arise, as namely, where the ground lieth not high, and that *marle* commonly is very good; and there is in diverse level grounds good *marle*.

And as *marle* is for the most part of these foure colours, so is arable ground for the most part of these foure sorts following; that is to say, either a cold, stiffe and wet clay, which is either the cope of the *marle*, or lieth neere unto it, and is therefore commonly called, *The marle cope ground*, or a haifell mold, which I count to be one of the best wealdish moulds, being a compound mold, and very good for *marle*, and will quit the cost very well. Then are there two sorts of sandy mold, the one being a reasonable good kind, but not equall to the haifell mold, for you shall have in divers places of the weald this haifell mold to beare two or three good crops of wheat being Summer-fallowed, together, which you shall hardly have of any sandy ground without mending: but as I said of the better sort of these two kinds of sandy molds, you have commonly very rich wheat, being well marled, which is not so barren as the other; but this last kinde of sandy mold, is a very barren kinde of ground, and hath a very fleet mold, and you shall have very heath grow upon it in divers places; and yet being ordered as followeth with *marle*, will beare both good corne and pasture. And now that we may the better understand how to marle and manure every of these sorts by it selfe, you must know that the haifel ground being dry, and not subject to winter-springs, or teares of water (for, which some call such, A whining or weeping ground)

Foure sorts of grounds.

1.

2.

3-4.

The ordering
of the haifcell
mou'd.

ground) is to bee handled thus.

First, p'ough it as deepe as you can, with the strength of eight beasts at the least; and be not afraid to plough up some part of the dead earth that lieth under the upper good mold, for the Sun, the raine, the wind, and the frost, will in time mellow & amend it; and besides that, the mould will be the deeper for a long time after, and thereby keepe it selfe the longer from being stiffened with the *Marle*. Then may you bestow 500. cart-loads (as we call them) of *marle* upon each Acre thereof, every load containing 10. or 12. Bushels of eight gallons, and each Acre containing 160. Rods of 16. foot and a halfe to a rod. Then also you may chuse whether, at the first breaking up you will sow it with Oats, to kill the grasse, or else first marle it, and sow it with wheat, or otherwise Summer-fallow it in the *May* after the Oats, and then marle it, and sow it with wheat. Vpon that fallow or gratten (as wee call it) you shall doe well to sow it with pease, and at *Michaelmas* following, to sow that Pease stubble or gratten with wheat againe, which also will be the better, if the Summer wherein it carried Pease, were moist, because the pease being rich and thick, doe destroy the grasse, that together with the washing of the fallowes by rain, doth greatly consume the hart and vertue; or as we call it, the state of the ground. But if that Summer were dry, then is a fallow best, because the Sunne with his heat doth much good to the ground, and inableth it the better to beare out the weather in the Wheat season ensuing. If you like to sow it, as I said, with pease, sow them as early and timely as you may, for they will be so much the sooner harvelted; and then also you may plough or stirre your gratten the sooner, whereby it will be the better hardned to beare out

out the weather in the time of sowing your wheate : but I doubt, Pease doth somewhat stiffen it. Two bushels of wheat do suffice for the sowing of an acre hereof, except it be for the first crop, after the new breaking up of the ground ; during which time, there is found a worme called an *Emble*, which in *French* signifyeth corne in the ground, being of colour yellow, and of an inch in length, and will eat some part of the corne ; but if you sow it thicke, it will be both small eared & thick, and slender of straw, which the raine & wind will beat and hurle downe, and then it will scarcely rise againe ; or if it do, yet through the neerenesse of the shadow of the trees and hedges, that in so small closes be many, it will rather rot for want of drying, then come to maturity, that is, to perfect hard, and full growne corne. After your first marling, you must carefully foresee, that you plough not this ground either with deepe or broad Furrowes, but fleet and narrow, lest you cast your *Marle* into the dead mould ; for *Marle* differeth much from dung in this behalfe ; dung spendeth it selte upward, and howsoever deepe it lie, the vertue thereof will ascend : but *Marle* (as saith *Sir Walter Henley*, in his Husbandry) sendeth his vertue downward, and must therefore be kept aloft, and may not bee buried in any wise. Furthermore, if your ground be hillish or coppied, it shall bee fit that you make your Ridges 7. or 8. foot broad at the least ; for in such falling lands, the more broad furrowes you make, as you must make many, where you make Ridges, the more of your *Marle* shall be washed and carried into your bottomes. It is good also to draw a crosse or quarter Furrowe, and opening the endes of your land Furrowes into it, to leave the other endes of your Furrowes stopped ;
that

that the water-shoot run not all the length of the field. Againe, this ground would alwaies be sown under furrow, and that also before *Michaelmas*, if the season will so permit, for this ground (if it be well husbanded) will bee mellow and hollow, or loose, whereby through Raine and frost, it would sinke downe from the root of the Wheat; if it should bee sowne above furrow, the which being uncovered, must needs be bitten and killed with the cold. It is also very fit that you harrow not this sort of ground too small, but that you leave the clods as big as a Bowle, the which being mouldred with the frost, will both cover and keepe warme what is underneath. Moreover, it shall bee good, that upon some faire and dry day, in the beginning of *March*, you put your flocke of sheepe into your wheat, that with their trampling upon it, the corne may be well and fast closed with the earth; yea, & presently after (if it wil bear foot) you may roll it as you doe Barley, whereby both the Clods shall be broken, and the Gratten or Stubble shall be more even and ready for the Mower. Generally you must understand; that after you have bestowed your *Marle* in the field, you ought to let it lie unspread abroad, untill you be ready to plough, & then immediately after the spreading of it, turne it into the ground with the Plough; for otherwise if it should lie long spred in the field, the Sunne will spend no small part of the fatnesse thereof, although I know many desire it, because it will be the smaller being burned with the Sun, which I like not. And therefore also no good Husband will carry and spend his dung in the time of Summer, except hee doe presently withall plough it into the ground; for although the Mould of the arable Land it selfe will take good, if it be turned to the Sunne, which will both dry
and

and fasten it, yet the matter fareth far otherwise with the *Marle*, from which if the Sun shall draw and sucke the fat moisture that maketh the Land fertile, then becommeth it (as *Columella* speaketh) of the worst sort of ground, *Solum siccum, pariter & densum & macrum, quod sive exerceatur, sive cessat, colono refugiendum est.* It becommeth (saith hee) a dry, thicke, and leane Clod, which whether it be tilled or laid to rest, must be forsaken of the husbandman as unprofitable. And now your Haisell mould being thus marled, plowed, sowne, and manured, you may not charge with Wheate above twice, and then it must rest five or sixe yeares together; all which time it will beare a very good and sweet Pasture, well set with a white Clover, or three-leaved grasse, most batning and profitable, both for Sheep and Bullockes.

After those yeares ended, it will grow to some Mousse, or wil peradventure ca upst Broome, and then it is time to breake it up, and sow and handle it as before, for two other Wheat seasons or crops, leaving it a wheat-gratten or stubble, rather than with an Oat-gratten or stubble, which burneth the land being marled. Being thus interchangeably sowed and rested, your Haisell mould will continue good arable and pasture, by the space of thirty yeares together; whereas if it should be continually sowed, sixe, seven, or moe yeares together without rest, it will become utterly unfruitfull, both for Corne and Cattell also. Neither will it any thing availe to marle it over againe when it is so decayed, because the former *Marle* having his juice exhausted by continuall Tillage, whereof the Corne sucketh one part, and the Sunne, Winde and Weather dryeth and wasteth the rest, is but a dead Clod (as I said) that is not capable of

of new *Marle* to amend it, nor casteth any profitable grasse at all; for prooffe hereof, I my selfe, seeing that the common earth of High-wayes, were by treading of Cattell, washing of Raine, and the drying of the Sunne and weather, it lay separated from that naturall juice which it hath in the pit, and spreading it upon the ground, I saw that the land was not onely not amended, but much the worse by it. And now for an end of handling this sort of Haifell ground; if it shall appeare unto you, that five hundred loads of *Marle* upon the Acre, have clanged, stiffened, and too fast bound your land (as indeed the nature of *Marle* is to bind and to stiffen) then take you some of these waies to help it: either lett it foure or 5 yeares, or fodder upon it before you beare it up with so many Cattell as you may; or take the uppermost part of your Ditches or Forelands, or waste places of your fields which you may mingle with Dounge, and which, before you sow your Wheat, you may lay upon your fallow, and stir it in with your plow, and by this you shall both loosen your *Marle*, and refresh your ground, so that within forty yeares the mould of your ground will cleane eat up and swallow the *Marle* that you lay upon it; and then become hungry, and is capable of *Marle* againe as it was before at the first.

And by this also you may see the very cause for which it is good not to sow your marled land continually, but to pasture it by turnes, and so give it rest; namely, because the continuall plowing doth exhaust and spend the fat of the *Marle*, leaving the droffie, dry, and fruitlesse parts thereof, to lye and cover the face of your ground; whereas pasturage, through the doungeing, treading, and foddering of Cattell, doth increase a new Mould, which mingling it selfe with the dead Mould, doth

doth in the end give some life and heart unto it. And therefore these Farmours and owners that have beene at the cost to marle their ground, and will not forbear to till it, but halting to raise their charge, doe thereby utterly strike it with barrennesse, are like to *Aesop* man, who having a Henne that layed him everie day a golden Egge, and being greedie to have all the gold at once, did therefore kill the Henne, thinking to have found her belly full of gold, and so was both defrauded of that he looked for, and lost also what he had before. Hitherto of the nature, ordering and marling of this Haisell ground. Generally now for the continuall fallowing and stirring thereof, you must understand, it may neither bee fallowed wet, lest it answer more Grasse than Corne; nor yet so dry, that the dead bottome swell up, as in great drought it will, and swallow the good Mould that lieth above, and therefore bind not your selfe to any precise time of any moneth, but the opportunitie either in *May* or *June*, as you shall finde the weather to have prepared it for your desire. In the like temper you ought to stirre it after a showre, after *Saint James* his day, or in the end of *July*; for so will it be dry and hard before the time of sowing, whereas if it be stirred later, every small Raine will distemper it into Dirt or Mire, by reason of the tendernesse thereof, and then can you not fitly bestow your seed upon it.

The Marle Cope ground followeth, which is most commonly (as I said) a stiffe, wet, cold Clay, and not so fit as the former to be marled for Corne, except in some few fleet places thereof, but yet it may serve for Pasture or for Oates; such of them as bee marled, must bee fallowed fleet or shallow, lest the Marle become

The ordering
of the Marle
Cope ground.

come drowned in the wet: then being marled, they may in dry Summers (and not over moist Countries) beare Wheat in some mediocrity. Three hundred loads at the most of *Marle* are sufficient for an acre of this kinde, and two bushels and a halfe of wheat will sow the same, which must be cast above furrow fourteene or twenty dayes before *Michaelmas*. It requireth round, high and narrow Ridges, and that the water-furrowes be stricken somewhat deepe, the better to conveigh moisture from the Corne, and that it be left cloddy as much as may be: and yet to say the truth, such as will convert this sort of ground to tillage, must provide a greater quantity of rich ground or Greet (as we terme it) and Dounge, than of *Marle* it selfe, to amend this Land withall. But if there be any ground that is light and whining, or weeping, because of Springs that are therein, and therewith doth cast up Rushes, let that be marled upon the greene land with 4. hundred or five hundred loads upon the Acre, about the latter end of Summer; for so will the *Marle* sinke into it, and cast up a sweet grasse for eight or ten yeares together, and untill that the *Marle* be sinke so low, that another sword or crust of earth be grown over it, and then is it fit time to plow it, but yet very fleet and narrow, for so will it bear good Oats; but if it be so wet that you cannot adventure to sow your Wheat upon it, because the Rushes be not killed with this first plowing, then may you sow it againe with Oats, drawing good water-furrowes to draine it, because it will be the wetter for plowing, and thereby the *Marle* also will the sooner lose his force; thus doing, let it lie to Pasture againe.

Rushes.

Dyers-weed.

There bee some other grounds of the *Marle* Cope, which carry a lowre Grasse, and the Dyers VVeede (com.

(commonly called Greening weed) and having a great tore thereof, the which also may be amended by three hundred or foure hundred load of *Marle* upon the acre of the greene land: for the *Marle* will both rot the tore or vesture thereof, and also enrich the mould very much; so as it will answer good Pasture twelve yeares after: and when you shall perceive that the *Marle* is well sunke, then may it be ploughed fleet and narrow, sowed with Oats, and fallowed; so may it both beare good Wheat, if it finde a good season, and bee the richer a long time after, partly by the benefit of the *Marle*, partly by the rotting of the tore, and sword, and partly by the dung and water of the Cartell that pasture upon it: for the sweeter the Pasture is, the more Beasts it feedeth, and the more Beasts it beareth, the more it selfe is amended by it.

Touching the fallowing of this ground, great heed is required: for as it swelleth more then the Haifell ground, if it be taken hard and dry, so it is more grassie then that, or the sandy Soyle, if you fallow it wet: The season therefore followeth commonly in *Aprill*, or in the beginning of *May*, for to fallow it, and to stirre it about *Midsummer*, or so soone after as the raine shall have prepared it meet for your un-shod Oxen to labour upon it. Many men fearing to hit the right season for this ground in the Spring of the yeare, doe make it ready by a Winter fallow before *Christmas*, and by stirring it before *Midsummer*, if they may; which manner is not to be misliked.

Lastly, commeth the two sorts of sandy ground, and gravelly mould; the one being to be ordered much after the Haifell mould, saving he would have somewhat more *Marle*, and also would bee favoured more in the

The ordering
of the sandy
moulds.

often tillage, than it : for the Haifell Mould will bear or endure more tillage than the Sand. But this last sort of sandy ground, being a very staring Sand (as weeneto call it) for much of it will beare Heath, being of it selfe very barren, and very flect or shallow Mould, and over hot and dry, and by reason of that extremity, is unfertill, except it bee mailed very plentifully. And therefore when you breake up this ground, plow it as deepe as you may, not fearing to cast downe the best Mould thereof, because the *Marle* will pierce thorow, and sinke downe into it. An acre of this ground requireth five hundred or fixe hundred loads of your *Marle* at the least. Sow alwayes under-furrow about *Michaelmas*, with two Bushels and a halfe upon the Acre, which it will better carry than the Haifel ground: for although the straw be small, yet will it bee harder, and stand better than that of the other. The worme whereof I speake, will be busie with that, that groweth on this sort of ground, untill that the heat thereof be somewhat asswaged by the *Marle*. If your ground be hilly, make your Water-furrowes in such sort, as I have said before, for the saving both of your *Marle* and Mould; harrow it very little, leave it as cloddy as you may. After that you have taken a Crop from it, fallow that Wheat Gratten or Stubble in *May*; after that stirre it also, and then about *Michaelmas* sow it with Wheat againe: for it is not yet rich enough to beare you good Pease. This done, let it rest foure or five yeares, and if it send up any plenty of Broome, cut or pull them when they be of some meane bignesse, but plow not the ground, untill it have taken such rest; and after it, you may well breake it up of new, and sow it with Oats: which Oat Gratten or Stubble, you

you must Summer-fallow, when it is at the Harvest; and then if you desire to have it in good heart, you must marle it with three hundred or foure hundred loads upon the Acre againe. After this Crop thus taken, rest it five or sixe yeares, and then take one crop more of Oates from it, and after a Summer-fallow, sow it with Wheat, and suffer it to lye a Wheat Graten or Stubble, till it shall have rested as before is appointed for the Haifell ground, and so it will bee the better thirty or fortie yeares after the marling. Wee have in this Weald a sandie and gravelly ground that is wet and weeping, the which is scarcely worth the marling, except the nearnesse of the *Marle*: and thereby the small cost and charge thereof may intice a man to bestow the cost upon it with *Marle*, and then the best way is to marle upon the greene Land, or upon a fallow, with five hundred loads or more upon the Acre, or rather to take the profit thereof by Pasture than by Tillage: for it will hardly beare good Corne, which is soone killed with the wet vapour that is continually sent up from the wet Springs that lye under it. This sort of ground is to be fallowed, when it is both hard and dry, because it swelleth not as doth the Haifell Mould, and may therefore bee take in *June*, if former faire weather bring it not to a dry season; and it is to be stirred also after a shovre, in the like plight as the Haifell mould before. Your marleable grounds being ordered in this wise, severally set downe for each kinde of them will continually stand fruitfull either for Corne or Pasture: and albeit the high prices which Corne hath of late yeares carried, may allure some men to sow Corne incessantly, and thereby to spend their *Marle*, and to choke their arable in the

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end,

end, yet I doubt not but the wiser sort can see that it is much better to maintaine their grounds hearty and in good plight for ever, than to raise a short gaine, that will bring a long and perpetuall losse upon them, the rather also, because that Butter, Cheese, and the flesh of Beeffe and Mutton, be advanced in price equally, if not beyond Wheat, Rie, Barley, and the other Graines. Howbeit a good Husbandman will make his profit of them both: for if he have one hundred, or one hundred and twenty Acres of this Wealdish arable, hee will so marle and manure them, that dividing his land into five or sixe equall parts, he may continually plow twenty or five and twenty Acres for Corne, and yet lay to Pasture the rest by turnes: so that by the helpe of his *Marle*, his Land shall be continually rich and profitable, both in the one and other of them. And as thus I have spoken of the Weald, describing the nature and property thereof: so may every man of discretion and judgement, which shall meet with earth of the same quality and condition (in what part of this Kingdome soever), make application of these Rules before rehearsed, and no doubt but the profit will make both the labour and cost profitable and pleasant.

The severall wayes, according to the opinions of Writers, and the certaine wayes according to the experience of Husbandmen, for the destruction of Moles or Moales, which digge and root up the earth, and how to reduce and bring the ground to the first goodnesse, having bin spoiled by them.

IT is needlesse either to describe the nature and quality of this vermine, or the injury and hurt which they do to the Husbandman, Gardiner, and Planter, since no Country is exempt from their annoyance: but touching the remedies, they are of greater secrecie, and therefore I thought good in this place to insert them.

The ancient writers are of divers opinions touching the manner of destroying this creature, and therefore have left unto us sundry Medicines how to worke the same: amongst the which, one writeth, as an approved experiment, that if you take Walnut shels, and fill them with Brimstone, Chasse, and Petrosin, and then setting them on fire, put them into holes or trenches, thorow which the Moale passeth, and the very smell or stinke thereof will poyson them; so that if you digge, you shall finde them dead in their holes.

Another affirmeth, that if you take Brimstone, and danke stinking litter of horses, and burne it in the holes or haunts of the Moales, it also will impoyson them; so as you shall finde they will come out of their caves, and lye dead upon the greene grasse.

A third affirmes, that if you take greene Leekes, garlick, or onions, and chopping them grossely, thrust it into the holes, and the very fume or savour thereof will so astonish and amaze the Moales, that they will presently forsake the earth, and falling into a trance, you may

may take them up with your hands. Now there is not any of these medicines which can bee disallowed: for there is no doubt but that they will worke the effects spoken of, if the moale can be brought to take a full sent thereof: but it is a vermine curious of sent, and passing quicke of hearing, and being in a spacious ground, will prevent these baits; and therefore they are rather to be applied for gardens or little grounds, where there is but a moale or two, than in large fields, where there be many hundreds.

To conclude, for this matter of medicines, or for the helping of gardens, hop-yards, or any small spot of ground, there is not any thing held more availeable, than to sow in that place the herbe called *Palma Christi*: for it is found by certaine experience, that wheresoever that herbe groweth naturally of it selfe, or otherwise is either purposely sowne or planted, there in no wise will any Moale abide.

Thus much I thought good to shew you for the use of medicine, and for clearing of small grounds: now for the annoyances which happen to great, large, and spacious fields, through the multitude of Moales; there is onely three absolute waies for the curing of the same.

The first is, in the moneths of *March* and *April*, to view where they cast, and go about to make an extraordinary great hill, in which they build them nests, which is knowne by the newnesse of the mould; then look for the new trench which leadeth to the same; for as she goeth she returneth: then with your moale-spade open the trench in divers places, and then very still and silently, and observing to take the wind, to prevent both hearing and smelling, watch the Moale as shee goeth or returneth, which is, Morning, Noone, and Evening, and as soone

soone as you see her cast, strike her with your Moale-speare, made of many sharpe pikes, and so cast her up, and kill her. Thus have I seene by one man an hundred destroyed in one day.

The next infallible way for the destruction of Moales is: If you can by any possible meanes bring in water to overflow and wash your ground, and as soone as the earth is wet over, the Moales will come forth of themselves, and you may gather them up with your hands at pleasure.

The last (in deed as much approved as any) is to take a live Moale in the moneth of *March*, which is their bucking or ingendring time, and put it into a deep brass Bason, or other deep smooth Vessell, out of which the Moale cannot creep, and then at evening bury it in the earth up to the brimme, and so leave it, and the imprisoned Moale will presently beginne to strike, or complaine or call, so that all the Moales in the ground will come to it, and tumbling into the Vessell, they are prisoners also, and the more prisoners, the greater will be the noise; and the more noise, the more Moales will come to the rescue, so that I have seene 50. or 60. taken in one night, and in one Vessell or brasie Kettle.

Now having thus learned how to destroy the Moals, it is meet you also know how to prevent the comming in of forraigne moales; because though you keepe your ground never so cleane, yet if your next neighbour be an ill Husband, his field may soone impoyson yours againe: therefore to prevent the comming in of any forraigne moale, make but little Furrowes or Trenches about your ground, and scatter in them small round bals made of Hemp-seed, or Hemp-seed and *Palma Christi* beaten together, and you shall not need to feare the
comming

comming in of any neighbour Moales, how many soever there be about you.

Lastly, for the reducing or bringing the ground to the first perfection againe (for howsoever some Husbandmen say, moe Moale-hills, moe ground; yet tis certaine, that moe Moale-hills, lesse good ground) for never was yet sweet grasse scene on a Moale-hill; therefore to bring it to perfection, which I meane to be meadow ground, or ground to be mowne, which Moale-hills cannot be: you shall first with a sharp paring-shovell, pare off the swarth about three fingers deepe, for feare of hurting the roots of the grasse; and then the swarth taken off, digge away the rest of the mould, and scatter it as small as you can round about the hill, then take the Greene swarth, and cutting it artificially, lay it close, and fast, and levell, where you tooke away the mould, as if there had never beene Hill there: and thus doe to all your hills, though they be never so innumerable; and after all your ground is levelled, as soone as the first showre falleth, run all your ground over with a paire of backe Harrowes, or an Harrow made of a Thorne-bush, and it will breake the mould as small as ashes, which will so comfort and refresh the root of the grasse, that it will grow in infinite abundance; and the sowrenesse which was caused by reason of the Hills, will come againe to a perfect sweetnesse, and the meadow will bee more fruitfull then before by many degrees. And thus much for the destruction of Moales, and the reducing of the earth to his first goodnesse.

MARKHAMS

Farewell to HUSBANDRY;

OR,

The Enriching of all sorts of Barren and Steril grounds in our Kingdome, to be as fruitfull in all manner of Graine, Pulse, and Graffe, as the best grounds whatsoever :

Together with the annoyances, and preservation of all Graine and Seed, from one yeare to many yeares.

As also a Husbandly computation of men and Cattels daily labours, their expences, charges, and utmost profits.

The fourth time, revised, corrected, and amended, together with many new Additions, and cheape experiments :

For the bettering of arable Pasture, and wooddy Grounds. Of making good all grounds againe, spoiled with overflowing of salt water by Sea-breaches: as also, the Enriching of the Hop-garden; and many other things never published before.

L O N D O N,

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